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ABSTRACT

Strengthening the linkages between educational institutions and the labor market is an important component of improving U.S. education and training system. In an effort to gather data on faculty linkages to their institutions, local labor markets, and communities, surveys were mailed to 3,500 academic and vocational faculty at community colleges across the United States requesting information on their characteristics and involvement with business and community organizations. Study findings, based on responses from 1,725 faculty, included the following: (1) vocational faculty were more connected to the labor market, largely because their programs depended upon enrollments and placements for survival; (2) part-time faculty had generally weak connections to their institutions, as well as lower levels of connectivity to the labor market; (3) faculty had very little available time to undertake intensive linking activities; (4) a lack of institutional resources limited professional development and workplace placement opportunities for faculty; (5) institutions did not formally reward linking behaviors and faculty received little support from their colleges, with the exception of vocational faculty in career assistance activities; (6) faculty in multi-campus districts generally showed lower levels of connectivity; (7) strong boundaries existed between academic and vocational departments and between credit and non-credit programs in most colleges, limiting collaboration and information sharing; and (8) local conditions greatly affected the opportunities for faculty to build linkages. Contains 18 references. Data tables are attached. (TGI)

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Connecting College and Community in the New Economy? An Analysis of Community College Faculty-Labor Market Linkages

Dominic Brewer and Maryann Gray

DRU-1679-NCRVE/UCB

July 1997

Prepared for the National Center for Research in Vocational Education and the University of California, Berkeley

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PREFACE

America's two-year colleges play a pivotal role in providing millions of students with the education and training they need for success in the modern economy. For decades, some colleges have made extensive use of local business resources in program and curriculum development, and spurred by federal and state legislation have recently sought to improve these connections through school-to-work activities including apprenticeships, co-op programs, work-based learning, and contract education. Faculty also provide connections to the labor market via other employment, interactions with employers, and membership in local community organizations. Despite the apparent importance of such activities, very little is known about their extent, which types of faculty members participate, and the barriers to making connections.

In this paper we report evidence from a study of community college faculty in which linkages to their local labor markets and wider communities are explored. We use a unique national survey of faculty collected for the project and a small number of case studies to show that faculty engage in a wide range of relatively low-intensity types of connecting activity, but that stronger connections are rare. We find that part-time and academic faculty are far less likely to forge linkages between their institutions and the labor market than full-time, vocational instructors. Faculty receive minimal institutional support for such efforts. We find that there are several important barriers to improving linkages related to faculty time and institutional structures; faculty are not skeptical about the efficacy of building links. We conclude with some suggestions for strengthening connection between faculty and their local labor markets and communities.

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I. INTRODUCTION

Community colleges in the United States are a critical but understudied part of the educational and training system (Dougherty, 1994; Cohen and Brawer, 1989).[1] These institutions perform a multitude of tasks including preparing millions of young Americans for direct entry into the labor market as well as transfer to four-year colleges, retraining and upgrading the skills of older workers, and providing basic education for adults. In an era of structural economic transformation, when the job skills required for success in the labor market are changing rapidly, community colleges play an ever more significant role in facilitating students' school-to-work transition. If they are to be successful in this labor market preparation role, there need to be close links between institution, faculty and the labor market in terms of program offerings, content of those programs and subsequent placement of students into jobs. This has been one of the premises (sometimes implicit) in recent changes to vocational education policy reflected in federal legislation such as the Perkins (II) Act of 1990 and the School to Work Opportunities Act of 1994, as well as other state and local reform initiatives.[2] Community colleges have responded with a range of programs, such as tech-prep, school-to-work, service learning, and cooperative education, which emphasize coupling classroom work to applied experience in local business, government, or nonprofit settings. Such efforts demand that postsecondary vocational instructors have high-level, up-to-date technical skills, and are keyed in to changing labor market needs.

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[1]We use the terms "two-year" college and "community" college interchangeably throughout the paper, recognizing that this includes comprehensive community colleges, junior colleges and technical schools. The focus is on public institutions.

[2]The emphasis on connectivity between educational institutions and the labor market is not simply a U.S. phenomenon. McFarland and Vickers (1994), in a review of trends in several OECD countries, argue that "in the context of rapid technological, structural and social change, there is an ever greater danger of mismatches between what schools do and what firms need. Because of this, the interest in creating strong and effective links between educators and employers increases when the rate of change is substantial. Business partnerships can also help smooth youth's transition from school to work" (p. 4) and that "the practical implementation of 'votec' reform depends on cooperative links among public and private sector institutions" (p. 5).

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Although recent studies have collected some information on the development and effectiveness of work-connected programs in two-year colleges (for example, Bragg et al., 1994, Stern et al., 1994) few studies (if any) have focused explicitly on the types and intensity of formal and informal linkages or connections which individual faculty members have to the workplace. Our study is designed to fill this gap in the literature. Our premise is that faculty linkages are critical to the success of vocational education reform, and required to integrate work experience with traditional classroom education. Our overriding goal is to understand how faculty are linked to their local labor markets and communities, how strong these links are, and what factors—at both individual and institutional levels—can explain these links. In particular we are interested in what institutional policies and strategies seem to promote linkages among faculty, and what the barriers to building labor market connections are.

To achieve this goal, we pursued both a quantitative and qualitative data collection strategy. First, in fall 1995, we administered a survey to approximately thirty-five hundred community college instructors in about one hundred public institutions nationwide. This survey, with its large-scale and national coverage, gives us a unique opportunity to generalize with some confidence about the behaviors and attitudes of community college faculty. Second, we conducted intensive case studies of several colleges (selected on the basis of survey results), which included interviews with senior administrators and both academic and vocational faculty.

The survey reveals that low-intensity linkages (such as using business examples in the classroom) that require relatively little effort are widespread among all types of faculty. Faculty are less likely to undertake more pro-active measures (such as taking students to visit local business, government or community organizations or developing new programs with work components), which are time consuming and labor intensive. The linkages that do exist tend to be focused on career assistance. The survey confirms what we anecdotally expected to be true: academic faculty are less likely than vocational faculty to engage in all types of linking activities. Part-timers are also less connected than full-timers. Institutional linkages do not automatically mean that faculty are connected to labor markets, or that students benefit from these linkages. These results were backed up by our interviews and observation in our case studies.

We find that most faculty believe building connections between employers and colleges is important, and that employers are generally interested in such linkages. Traditional boundaries between programs and disciplines and the competing demands on faculty time emerge as critical barriers to building connections. We also find that there is little institutional support for building linkages, particularly in the realm of formal incentives, due to constrained resources.

The remainder of the paper is set out as follows. In section II we elaborate on the underlying premise of the report: that strong linkages to the labor market by faculty and institutions are important for the implementation of vocational education reform and a necessary ingredient to improving the nation's education and training system. We also provide a framework for defining and explaining labor market connectivity. In section III we describe our survey and case study methodology. Sections IV and V present and discuss our results. The former maps out the type and extent of faculty-labor market linkages, and the latter seeks to explain these patterns. Section VI provides some conclusions and recommendations.

II. BACKGROUND AND FRAMEWORK

Overview

In this section we argue that linkages between educational institutions, their faculty, and the labor market are important in the context of a changing economy. In fact, the importance of such connections has been an implicit premise of recent federal and state policies. We then provide some examples of the kinds of connections which historically have developed between community colleges and the labor market through vocational programs, and provide a way of classifying the types of linkages one might expect to find in this setting. Finally, we focus on the role of faculty in connecting to the labor market and offer a framework for understanding why some faculty might engage in such behavior and some might not.

Why are Links Between Two-Year Colleges and the Labor Market Important?

The U.S. economy has undergone major structural changes in the past two decades. Intensified global competition and technological developments have increased the need for workers with flexible and technical skills. New labor market entrants will need to demonstrate adaptability and a high degree of specialized knowledge. Workers are more likely to hold jobs for shorter periods than in the past and, over time, workers will require retraining or upgrading of their skills. At the same time, many employers perceive deficiencies in students' basic literacy and numeracy skills. These trends are set against the background of what many perceive to be a weak school-to-work transition system in the U.S., and fragile linkages between formal education and training (Grubb et al., 1992; Stern et al., 1994). There is also emerging evidence that many young people have difficulty obtaining stable employment (Klerman and Karoly, 1993). All of these points suggest a need for closer, reciprocal communication between educators and industry-labor market connectivity.

Policy makers at federal and state levels underscore the importance of such linkages. For example, the often cited CSAW report, *America's Choice: High Skills or Low Wages,* argues the need for an improved education and training system in the context of changing work and new skill demands; "Goals 2000" calls on educators and employers to develop skill standards together; the School to Work Opportunities Act of 1994

specifically funds the development of formal partnerships between employers, public secondary and postsecondary institutions, and labor organizations; the reauthorization of the Perkins Act in 1990 ("Perkins II") tried to stimulate "tech prep" and the integration of academic and vocational subjects at both K-12 and postsecondary levels, calling for the broadening of vocational curriculum to cover "all aspects of the industry," making greater use of work experience and building a "broad career preparation system."

Community colleges are a critical component of this education and training system. They provide millions of students with the skills they need to enter the sub-baccalaureate labor market. In 1994-95, community, junior and technical colleges enrolled over 5.4 million students, some preparing for transfer to a four-year undergraduate institution, others completing occupational training, and still others taking classes in basic literacy and numeracy. These institutions are at the nexus of the school-to-work transition. We therefore focus on two-year colleges and their linkages to the labor market and community.

Community colleges may link to the labor market at a variety of levels: institutional, departmental and program, and individual faculty level. While formal arrangements are likely to exist at the former two levels, it is individual faculty who interact on a day-to-day basis with students. Faculty have primary responsibility providing students with the skills they need for the workplace. For this reason, our primary focus is on the behavior of individual faculty members, within the overall institutional context.

The first set of questions we seek to answer are about the *types* of links faculty have to local labor markets: How do community college faculty obtain information about local labor markets? What is the nature of their personal and departmental ties to local employers? To what extent, and in what ways, do they provide students with information about the local labor market? What kinds of input, both formal and informal, does local business provide for curriculum planning? The second set of questions deals with explaining *why* some faculty engage in linking behavior and others do not, and why we observe certain types of activities and not others. Toward this end we explore the influence of some individual characteristics and institutional conditions, and in particular the barriers and facilitators of labor market connections.

What are Labor Market Links or Connections?

Community colleges have a long a history of ties to local business and industry and to the broader communities they serve—in most cases it is part of their formal mission. Dougherty (1994) notes that local initiatives gave rise to most community colleges. Business professional organizations such as the Chamber of Commerce saw colleges as instruments of economic development (p. 127).[3] As college functions expanded, so did the opportunities for connections to the local labor market and community, through vocational and community education. Cohen and Brawer (1989) detail the expansion of vocational activities particularly during the last third of this century spurred by the 1963 Vocational Education Act and subsequent infusion of federal funds.

Today, an estimated forty to sixty percent of all two-year college students are undertaking some form of vocational training. Students typically enroll in an occupationally specific program offered by their local college. How are these established? "The college staff *presumably* initiate programs by perusing employment trends in the local area and by surveying employers there" (Cohen and Brawer, 1989, p. 212, emphasis added). Lynn and Wills (1994) have argued that schools tend to offer courses more driven by the knowledge and interests of their faculty rather than the changing demands of the labor market.[4] Many programs include some element of work-based learning at an employer or internship or cooperative education type component. The programs themselves are often the major method by which students get placed into jobs in local businesses.[5]

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[3]Dougherty estimates that business supported the establishment of an average of sixty-eight percent of the community colleges he studied in California, Illinois, New York and Washington. He also finds that business people provided a major part of the membership of community college committees which were formed prior to the establishment of colleges.

[4]In a study of school-to-work programs, Lynn and Wills (1994) found that where work-based learning programs have been developed there is often a weak link between students' experiences at the workplace and at the school or college.

[5]The NAVE survey (1994) found that the major responsibility for finding jobs for vocational/technical graduates fell on the students themselves, or with individual faculty

A key type of college-community linkage, at least in principle, is standing advisory committees for specific programs. For example, Bowles and Gintis (1976) have argued that "the connection between the needs of business and the curricula of community colleges is fostered by business representation on advisory boards" (quoted in Dougherty, 1994, p. 31). They meet several times a year to discuss program design and the details of the curriculum. There are also informal avenues for business-college connections, such as faculty presentations to business, administrators' participation in civic, community and business associations, and student assignments requiring interaction with employers.

In the 1970s, colleges greatly expanded "community education," a range of activities including adult education, basic education, continuing education, contract training and community services. These include courses for occupational upgrading, direct arrangements between an industry or government agency and the college for employee training, apprenticeship training, JTPA programs and economic development services. While there is anecdotal evidence that these type of operations have proliferated—particularly contract training partnerships—they are difficult to quantify. However, they represent examples of a highly connected college-labor market relationship.

There is some evidence that linkages have improved as part of recent vocational education reforms which emphasize work-based learning. For example, a study of school-to-work programs found that "the range of direct linkages with outside organizations has become remarkably wide" (Stern et al., 1994). More than two-thirds of two-year schools now offer co-op or work experience and one in six offers the classroom component of apprenticeship training. However, relatively small numbers of students actually participated in such highly connected activities. In a survey of six hundred seventy-five institutions, Stern et al. found that only 7.3 percent of full-time day enrollment students were in co-op programs and 3.1 percent were in apprenticeships. They also suggest that "despite the efforts of community, junior and technical colleges to provide inexpensive, flexible, high-quality training programs, the future of their

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in the student's specialty area. Stern (1992) notes that while career counseling and job placement offices have become almost universal at two-year colleges, they have not been successful at facilitating students' entry into the labor market.

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relationship with industry is unclear... the tie between employers and colleges is often too tenuous to sustain the training program." Bragg et al. (1994), in a survey of four hundred "tech-prep" consortia coordinators around the nation, found that 92.5 percent stated collaboration between educators and employers as an important focus of their efforts, 67.7 percent said some form of work-based learning experiences (youth apprenticeships, cooperative education, school academies) was important, and almost forty percent were providing work-based learning. Grubb and Kraskouskas (1992), in research focusing on the integration of academic and vocational education, found a slow proliferation of various types of integration (e.g., a general education requirement for occupational students, and development of academic courses in occupational areas like technical writing or business math).

In fact, relatively little is known about the nature and extent of linkages between college and labor market which occur through vocational programs. In all likelihood they differ greatly by college and by type of program. Understanding linkages to the labor market is important in understanding the implementation and success of vocational education reforms and for the future design of policies to improve the labor market preparation of students.

Given the broad array of connections between faculty and the labor market that are likely to exist, we developed (prior to our site visits but based on a review of the literature) a simple schema for categorizing the activities of faculty. Most behaviors fall into one of four domains: curriculum and pedagogy; career assistance; institutional service; and professional and community service activities. We organize our discussion on the types and extent of faculty linkages to the labor market around these four domains in section IV.

First, instructors may bring aspects of the labor market into their classroom via *pedagogical/curricula activities*. For example, they may integrate academic and vocational learning in class or develop student assignments requiring interaction with or work in the community. Second, students may receive *career assistance* from their instructors ranging from getting information about needed skills and available jobs to direct placement with an employer. Third, faculty may undertake various *institutional activities* such as taking the initiative in developing programs, or serving on departmental or program advisory committees which include industry input. Fourth, faculty undertake

various *professional/community activities*, including work outside the college (particularly part-timers) and membership in civic or professional organizations. While there is some overlap among these domains, they provide a convenient way of examining the wide diversity of connections between teachers in two-year college and their communities.

Why are Faculty Linked to the Labor Market?

In seeking to explain why faculty are or are not linked to the labor market, it is reasonable to postulate a set of individual and institutional factors that we would expect to influence the behavior of any individual instructor. In an economic framework, for example, we might consider faculty to be rational actors deciding how to allocate their time and effort subject to a set of constraints on their time and activities including those imposed by their institution. In this kind of simple model, faculty connectivity would be a function of the perceived importance of such linkages to their own and college's interest, the information they have on the labor market, the opportunities they have to share such information with professional colleagues, and the support for such activities they receive from their college. An alternative socio-psychological framework would similarly stress the importance of individual and institutional characteristics, faculty attitudes, and institutional climate in explaining faculty linkages to the labor market.

Utilizing this basic framework, both individual and institutional characteristics would seem to underlie faculty-labor market linkages. First, an individual faculty member's status—part-time/full-time, and teaching field—will be important. Many faculty are hired as part-time lecturers and have only temporary, and weak, connections to the institution. Community colleges employ faculty in a wide array of teaching fields and serve a number of different goals, ranging from preparing recent high school graduates for transfer to baccalaureate institutions to assisting recent immigrants in mastering basic English. Many academic programs seem far removed from the world of work, and some vocational programs may be more employment-specific than others. We would expect faculty to vary in the priorities assigned to their duties, including linking to the labor market.

Second, the extent to which individual faculty are linked will be influenced by the institution within which they operate. For example, in order to integrate labor market concerns into curriculum, faculty need sufficient information on labor market trends and

the needs of employers, and information on new pedagogical techniques and curriculum changes demanded by ongoing federal and state reforms. This may depend on the type of labor market in which the college is located, the extent to which administrators provide resources to faculty, and the extent to which faculty cooperate with each other. Faculty require assistance from their institution in terms of time, professional development and other incentives to engage in high-intensity connecting behaviors. The remainder of this section discusses these issues, and we return to them in section V.

Faculty status as full-time or part-time is expected to influence connectivity. Community colleges typically employ a large number of part-timers who hold secondary jobs outside of teaching. These faculty have a direct link to the labor market. In fact, one of the reasons two-year schools have always utilized a large number of part-timers is that "part-time specialists have 'more expert knowledge' than full-time generalists" who "bring an up-to-the-moment perspective to their teaching" (Eells, 1931, quoted in Cohen and Brawer, 1989, p. 75). Gleazer, president of the AACJC from 1958 to 1981, argued that the community college was the institution "capable of serving as a connector by virtue of its students and staff members, who frequently work at other jobs in the community" (quoted in Cohen and Brawer, 1989, p. 257). On the other hand, such faculty have relatively weak ties to their institution. They may not have offices on campus, participate in institutional decision making, and they have fewer formal qualifications than full-timers. Thus, the opportunity to use their labor market linkages to strengthen community college education may be limited. Full-time faculty have stronger institutional ties, but may have limited linkages with other local employers.

An instructor's teaching field will clearly influence the opportunities and incentives to have connections to the labor market. Most occupational programs have formal advisory committees through which faculty interact directly with local business and industry representatives.[6] Similarly, faculty are likely to be concerned about the

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[6]Cohen and Brawer (1989) have noted that linkages have been increasing partly as two-year college faculty have professionalized: "the liberal arts instructors at a few colleges have organized lay advisory committees to provide links between campus and community. Composed of influential citizens, such groups have functions far beyond advising on the curriculum in particular programs. Like career education advisory councils, these groups help recruit students to the programs, assist extracurricular

direct placement of their students into jobs and consequently care about the quality of the graduates they send out into the labor market. Within vocational fields, we might also expect differences, given that some programs are closely tied to a particular industry (e.g., nursing) while others are more general (e.g., business, technology). Academic faculty, by contrast, are further removed from these considerations. We should expect, therefore, differences in connectivity among faculty by teaching field.

A related point is that the professional and institutional climate within which faculty operate is likely to be important. Professional connectivity among postsecondary instructors would seem critical for dissemination of up-to-date information on changing labor market needs, legislative demands, new teaching techniques and curriculum innovation. The extent to which vocational and academic teachers interact may also be important given continuing integration of curricula, more joint classes and team teaching and the broader conception of vocational education being emphasized by policy makers. Within an institution, there may be limited opportunities for interaction among faculty. Grubb and Kraskouskas (1992), in their study of the integration of academic and vocational curricula called for by recent federal reforms, describe the community college as "an archipelago of independent islands, each serving a different mission but with limited communication among them" (p. 39). They found considerable evidence of pervasive disciplinary specialization and an important status difference between occupational and academic faculty. Little and Threatt (1992) found strong separation of academic and vocational instructors at the high school level.

Individual faculty need to have the tools to engage in building links to the labor market. This includes not just information, but the skills and resources necessary to undertake such activities. For example, there is a common view that vocational teachers, because they are often drawn directly from industry and many are part-time, have serious deficiencies in their pedagogical preparation; there are continual calls for "better preparation of vocational faculty" (NAVE, 1994, p. 7). Professional development at community colleges is widely regarded as weak. Hoerner et al. (1991) found in a

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presentations, act as guests in the courses and, most important, support the programs. They provide a new set of peers for instructors to relate to, and they offer the college a community connection" (p. 89). How widespread such committees are, and the extent of their role, is unknown, however.

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national survey that twenty-eight percent of faculty said professional development was "irrelevant," although they also reported that with a supportive college leadership professional development can advance institutional growth. In general, the opportunities for additional training are limited to traditional methods like campus workshops and conferences, and the incentives which institutions are able to provide faculty given their formal structures are limited to travel, tuition and sabbatical leave. Grubb and Kraskouskas (1992) found that most innovators in the integration of academic and vocational curricula acted without tangible institutional support.

In order to build linkages, faculty need to be informed about current labor market trends. The degree to which they have such information will depend in part on their own efforts and in part on their college administration, colleagues on the faculty, and the interest of local businesses in working with the college. These in turn are likely to be influenced by, for example, the physical location (proximity to viable economic base), historical development and mission of the college, connectivity among faculty, college governance structure, legal and funding environment in which the college operates, and the administration's view as to the importance of such information.

This discussion highlights the importance of several factors that underlie our analyses of our survey and case study data C in particular it suggests the significance of discipline and part-time/full-time status. It also suggests that institutional features such as location, governance, and resources will play an important role in explaining why some faculty undertake linking activities and some do not.

III. DATA

To study faculty linkages to their institutions, local labor markets and their communities, we pursued both a quantitative and qualitative data collection strategy. First, during fall 1995, we administered a mail survey to a national sample of thirty-five hundred community college faculty to gather data on the characteristics and attitudes of faculty and their linkages to the labor market. The survey included both academic and vocational faculty, full-time and part-time. Second, we conducted case studies of four community colleges across the country. The case studies provide more detail as to the types of links faculty have to the labor market and their communities and the institutional context within which faculty undertake such activities. In this section we explain our data gathering techniques and provide some details on our survey and case study samples.

Survey Methodology

Survey Instrument

Our survey instrument was intended to collect data on faculty backgrounds and labor market links. Drawing on previous surveys by NCES and others, advice from the American Association of Community Colleges (AACC) and other experts, and a pilot test of a draft survey instrument with faculty at two sites in the Los Angeles Community College District, a final survey questionnaire was completed in September 1995. All questions pertained to any individual who had at least some instructional duties during the 1994-95 academic year. Background items covered instructors' personal characteristics (e.g., age, sex, race, ethnicity); educational background (e.g., years of education, certification and degree status, colleges attended); work experience (e.g., years of labor market experience, type of positions held, current links to employers); and professional status (e.g., salary, full-time/part-time, tenure, subject specialty). Other questions concerned faculty's involvement in various college reform initiatives and use of innovative teaching practices, attitudes toward their job and institution, and the nature and extent of links to their institutions, teaching field, the labor market and community. In focusing on links, survey items cover the type and intensity of the links, and some of the supports (e.g., professional development incentives) and barriers to constructing links. We asked about each of the four domains of linkages—faculty pedagogical/curricula

activities, career assistance, professional and community activities, and institutional activities—noted above.

Survey Sample

To obtain the survey sample, we first obtained (again with the assistance of AACC) mailing lists of community college faculty from slightly over one hundred randomly selected institutions nationwide.[7] From these lists, we then randomly selected about thirty-five hundred names. We included academic and vocational instructors, tenure-track and non-tenure track, part-time and full-time, who had instructional duties in 1994-95. The survey was administered by mail in late October, 1995.[8] Data collection continued until April 1, 1996. During this time, we conducted three mailings and also placed follow-up phone calls; these calls indicated that many nonrespondents simply did not receive the survey due to bad addresses or job changes. The overall response rate was about sixty-four percent after excluding refusals, those who had changed schools, undeliverable surveys and ineligible participants. The final sample consists of 1,725 faculty in ninety-two institutions.[9]

A profile of respondents is shown in Table 1, which contains selected mean characteristics for all respondents, and separately for academic and vocational faculty. Faculty were divided into four groups based on primary teaching field: academic, vocational, developmental, and other. "Vocational" included faculty whose primary teaching field is in education-related subjects, social work, agricultural education, business and office education, health occupations, marketing/distributive education, occupational home economics, consumer and homemaker education, communications or

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[7]About four hundred randomly selected schools were contacted with a request for a list of all their faculty. We received responses from approximately half. We selected about one hundred colleges from the most usable lists.

[8]In some cases the survey was mailed to the home of the faculty member; in other cases it was mailed to the school/departmental address.

[9]2,159 surveys were returned: 61.1 percent of the initial mailing. It was determined that 337 of these were refusals, people who had changed schools, were no longer teaching, had died or retired, were undeliverable, or were ineligible. We suspect that many of the surveys failed to reach faculty due to incorrect faculty lists and mailing addresses.

computing, and technology education/industrial arts/trade. "Academic" included faculty whose primary teaching field is English, mathematics, physical sciences, biological sciences, social sciences, humanities, and foreign languages. For ease of exposition we concentrate on academic and vocational instructors throughout this report. When we refer to "all" faculty, we include vocational, academic, developmental faculty and "other."

The table shows that community college faculty are overwhelmingly white, about half are male and the average age is over forty-seven. Compared to academic faculty, vocational faculty tend to be older and less likely to be female or from minority backgrounds. Most community college instructors' highest degree is a Masters (or the equivalent), but almost one-quarter of all academic faculty have a doctorate. About one-third of all faculty have tenure, reflecting the fact that a large number of faculty hold instructor status, and about half are part-time.[10] Interestingly, in our sample, a higher proportion of vocational than academic faculty are part-time.

Our survey provides some institution-level data, including benefits of employment, professional development opportunities, and campus climate. Additional institution-level data from other sources were merged into our sample. Information on a college's region and size were obtained from the 1994-95 *Integrated Postsecondary Education Data System* (IPEDS). This was further supplemented by *AACC Annual Survey* on the urbanicity of a college and its governance structure (e.g., single-campus, branch campus of a state university, part of a multi-campus district).

(INSERT TABLE 1 ABOUT HERE)

One concern about our sample is whether it is representative of community college faculty nationwide. A point of comparison is the *National Survey of Postsecondary Faculty* (NSOPF), collected by the National Center for Education Statistics. This survey was conducted in 1988-89 and again in 1993-94 and was designed to produce nationally representative estimates of the characteristics of faculty in two- and

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[10]Our classification is based on our best estimate of how many hours per week faculty say they work: we arbitrarily define those working more than thirty-five hours per week or more as full-time. Initial inspection of the data suggest that moving this cutoff (to say, thirty hours per week) does not affect the reported findings in this paper.

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four-year institutions using weights supplied by NCES to convert sample statistics. Using over eight thousand responses from public two-year college faculty in 1993-94, we calculated selected faculty characteristics and compared them with our own sample. The results of this exercise are shown in Table 2.

The table shows that our sample is remarkably similar to *NSOPF-93* in terms of faculty gender (fifty-three percent male in our sample versus fifty-four percent in *NSOPF-93*) and race (eighty-eight percent white in our sample versus eighty-seven percent white in *NSOPF-93*). Our respondents are slightly older, of higher rank, and more likely to have tenure than those in *NSOPF-93*. Overall, however, our sample is broadly representative of community college faculty nationwide.[11]

(INSERT TABLE 2 ABOUT HERE)

Case Study Methodology

Our four institutional case studies were designed to supplement the survey results by describing how diverse community colleges connect to local labor markets and what factors inhibit or facilitate such linkages. As in the survey, our primary focus was community college faculty. Unlike the survey, the case studies enable us to explore other types of college-community linkages as well.

Site Selection

The selection of case study sites was limited to the ninety-two schools that were in the survey sample. Due to time constraints, we could not wait until all survey data were collected to select sites. We therefore conducted a preliminary data analysis when about seventy-five percent of the sample was collected to differentiate "high connectivity" and "low connectivity" institutions. To make this determination, we aggregated responses from each school for which we had ten or more responses, and calculated the institutional mean across a sample of survey items for each of the four key

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[11]It is not possible to compare our sample to *NSOPF-93* on some important dimensions—for example, part-time status—due to differences in survey items. It should be noted too that conversations with NCES staff suggest they have considerable difficulties in calculating accurate sample weights for these items.

domains of connectivity.[12] We then classified institutions significantly above or below the mean.[13] Approximately fifteen schools emerged as highly connected, and another seven as weakly connected to local labor markets.

Institutions were selected to provide diversity on the following criteria: *Urbanicity and location* —we sought institutions in urban, suburban, and rural areas and from different regions of the country; *Local economy* —we sought institutions in communities with different types of local labor markets, particularly industrial versus service economies, and those that served thriving and highly diversified economies and those that served more depressed areas or areas dependent on a small number of employers or industries; *Institutional size* —we included institutions with large enrollments (over twenty thousand students) and small (under twenty-five hundred students); *Institutional mission* —we sought colleges that placed differing emphases on the transfer versus vocational missions.

Following this preliminary analysis, we invited five institutions to participate as case study sites. Four accepted, and contact was never established with the fifth due to a change in leadership.

Characteristics of Sites

We studied four institutions in three regions of the country: southern California, a midwestern city, and the rural aouth. Table 3 displays the characteristics of each site.

(INSERT TABLE 3 ABOUT HERE)

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[12]Note that the very smallest schools, with only a few hundred students, were not included because these schools did not contribute sufficient faculty respondents to enable accurate assessments of their connectivity levels.

[13]Various analyses were conducted: different survey items were examined; academic and vocational instructors' responses considered separately and together; and alternate ways of measuring "extremes" were used.

Case Study Procedures

Two researchers spent two days at each institution, talking with twelve to thirty different individuals—presidents, administrators and faculty. Table 4 provides an overview of the respondents.

(INSERT TABLE 4 ABOUT HERE)

We used semi-structured interview guides throughout the case studies, with slight variations in the guides for different functions or departments. All case studies were conducted during spring or fall, 1996. Interviews lasted between sixty and one hundred twenty minutes. We guaranteed confidentiality of both individual participants and institutions, inviting respondents to speak freely about the challenges and opportunities facing their institution related to increasing linkages to local labor markets.

While interviewing was the predominant means of data collection, we also collected relevant documentation from the campuses, including, as available, course catalogs, institutional fact books, and special reports (e.g., report of institutional task forces, campus climate surveys, or strategic plans). Direct observation also supplemented the interviews. During the site visits, we observed several vocational classes, a departmental curriculum advisory committee meeting, as well as each college's laboratories, classrooms and other facilities.

Case Study Focus

In our case studies we sought to understand the ways institutions and faculty were linked to their local labor markets and communities. Among the issues investigated were: (a) the types of linkages the individual respondent and college had established with local labor markets, including any new or especially innovative linkages; (b) the challenges the respondents and college faced in establishing linkages; (c) how the institution encouraged linkages; (d) the perceived importance of linkages; (e) the perceived strength of existing college-community linkages; and (f) future directions for building linkages to local labor markets.

IV. THE NATURE AND EXTENT OF LABOR MARKET CONNECTIVITY

In this section we try to paint a picture of the kinds of activities faculty report undertaking and the extent of these connections. We discuss the results of our survey, supplemented with insights from our case studies. The survey provides us with an indication of whether faculty carry out a range of connecting activities and the frequency with which they occur. The case studies give us some concrete examples of faculty linkages to the labor market and their local communities. The purpose here is largely descriptive; analysis of the findings is undertaken in section V.

Complete survey results from these items are presented initially in Tables 5, 6 and 7, which show the means and standard deviations of various measures of connectivity for different types of faculty. (Appendix Tables 1 and 2 contain frequencies for all faculty.) The table items are grouped according to how they appeared on the survey. We discuss our findings on connectivity according to each of the four domains of linkages identified earlier, but present the survey results in tabular format by question (i.e., mixing domains) because we used different scales for each survey question.

To aid the reader in interpreting the tables, we indicate for each row of each table the linkage domain that the item is attempting to measure: curriculum and pedagogy (CP), career assistance (CA), professional and community activities (PR), and institutional activities (IN). Since we expect responses to differ by faculty type, we show means for all faculty and by part-time/full-time status and primary teaching field (academic/vocational). In general, differences between these groups are statistically significant, and the importance of these factors was confirmed by multivariate analyses, as discussed further in section V.

(INSERT TABLE 5 ABOUT HERE)

Table 5 shows the responses of faculty to the question, "Approximately how many times did you engage in each of the following activities during the 1994-95 academic year?" The response scale was "0 times" = 1, "1-5 times" = 2, "6-10 times" = 3, "11-20 times" = 4, and "more than 20 times" = 5. Table 6 reports the responses to a similar question, also on a five-point scale but where "never" = 1, "sometimes" = 3 and "often" = 5.

(INSERT TABLE 6 ABOUT HERE)

Table 7 also focuses on labor market connectivity measures. Faculty were asked whether they had engaged in a list of activities, and if they did whether they had "received institution support." The table reports, for all faculty and by type of faculty, the proportion of faculty doing the activity listed, and the overall proportion receiving support. For example, row a should be interpreted as saying that 49.0 percent of all faculty "asked an employer about the skills desired in new hires" and 25.4 percent of all faculty received some help with this activity (the equivalent of 51.9 percent of those who had engaged in this activity).

(INSERT TABLE 7 ABOUT HERE)

Curriculum and Pedagogy

Extent of Linkages

The survey reveals several important features of connecting activities related to curriculum and pedagogy. First, the results suggest that as the intensity required on the part of faculty for a connecting activity increases, the likelihood that it occurs falls. Second, vocational faculty are more connected to the labor market: survey responses across items in Tables 5, 6 and 7 show vocational faculty far more likely to be involved in linking activities than academic faculty. Third, part-time faculty are less connected than full-time faculty on most measures. Part-time vocational faculty are more connected than academic faculty regardless of status, though in no case do part-time vocational staff report higher levels of connectivity than full-time vocational faculty.

Faculty make widespread use of business applications in their classes to illustrate concepts (Table 6, item c). The mean for both full- and part-time vocational faculty is over 4 on the 1-5 scale (1 = never; 5 = often). Using business case studies (Table 6, item d) is much less likely to occur, and assignments that require students to interact with local business, government or community organizations (Table 6, item e) are relatively infrequent (mean = 2.3 for all faculty). On these latter two items, there are statistically significant differences between full- and part-time vocational faculty. The underlying frequencies (Appendix Table 2) reveal that of all faculty, sixty-three percent never or almost never developed such assignments during 1994-95; in contrast, only twenty-one

percent of all faculty never or almost never used business examples to illustrate concepts during the same period. Given the amount of work involved, very few faculty appear to have "personally developed new internship, apprenticeship, or cooperative education programs" (Table 5, item g), the modal response being zero times during the academic year for all types of faculty except full-time vocational.

The survey suggests that few faculty provide students with exposure to work settings—few had either taken their students to visit local businesses, or provided guest speakers from local business within the past year (Table 5, items e and f). The latter was more common than the former, though in both cases the mean indicates such activities occurred between zero and five times during the course of an entire academic year. Table 7, item i, also suggests only around fifteen percent of vocational faculty and five percent of academic faculty had co-taught a course with business, government or community representatives. (Item j indicates that fewer than fifteen percent of faculty had co-taught a course with a member of another department in the college over the course of the academic year.)

How important is business overall to the curriculum? The message from the case studies, confirmed by the survey, was that in academic fields they are of little consequence; in vocational fields they are important. Asked to "describe the impact of various groups on the curricula and programs" of their institution from weak (= 1) to strong (= 5), including "business and employers" (and "community organizations"), the mean for full-time academic faculty was 2.83 and the mean for full-time vocational was 3.42 for business/employers (statistically different at the one percent level). (There was little difference between vocational and academic as to the influence of community organizations, with an overall mean of around 2.5.) Overall, vocational faculty rated their own influence and that of business higher than did academic faculty, who felt that they, followed by administrators, were the most important players in determining curricula and programs.

Table 7 (items d and e) shows the proportion of faculty who had asked an employer directly to either comment on a syllabus or review a departmental curriculum. As one would expect, these indicate the stark differences between academic and vocational programs at two-year colleges. More than half of full-time vocational faculty had sought such direct employer input during 1994-95, while only around fifteen percent

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of full-time academic faculty had. More than two-fifths of full-time vocational faculty had asked (and more than one-quarter had convinced) local employers for funds or equipment for their college (Table 7, items f and g).

Types of Linkages

The integration of labor market and community linkages into curriculum and pedagogical practice was shown to be uneven in both our survey results and at all four schools we visited. To a large extent, differences are more a function of departments, disciplines or programs than institutions. Vocational departments are more strongly connected than academic department, many of which appear to make no effort to develop labor market linkages. Among the vocational programs, at the high end of the connectivity continuum are those disciplines that require clinical experience, internships, and practica, particularly the health professions (e.g., nursing, respiratory therapy, psychological technicians, physical therapy, emergency medical services) and child care, although many others also include such experiences (e.g., tool and die, welding).

Contributing to this variation across fields of study are state licensing regulations that require students to spend a minimum number of hours in approved work sites. Institutions may add their own requirements, and two of the four schools we visited could point to at least one program where the number of work hours that the institution requires of students exceeds the state licensing regulations. In addition, some training programs in each school we visited offered voluntary apprenticeships which enable those who participated to gain a higher level of certification (e.g., an apprenticeship in a midwestern welding program was required for eligibility to work on high-rise buildings).

Another means of integrating workplace linkages into curriculum is illustrated by one west coast institution which offers students the opportunity to earn credit toward a vocational degree or certificate through a "work experience education" program that includes independently-arranged, on-the-job training opportunities. Participating students are required to obtain a faculty supervisor, who is expected to observe the student at the work site at least twice during the semester. Similarly, one school offers an elective "Exploration Course" within their sewing program that included field trips to fifteen local employers.

Our site visits suggested a variety of mechanisms through which curricula were influenced by local employers. In many cases, the linkage was via formal program advisory committees (we discuss these further under institutional activities below). Some faculty suggested that such committees were a formality and simply a way of keeping local representatives abreast of developments at the college, while others stressed their importance as part of an ongoing two-way dialogue aimed at improve the content and rigor of the curriculum. Certainly the more energetic and committed faculty we spoke with appeared to be in almost continual contact with major local employers and with their program's graduates who had successfully gone on to work placements.

It must be noted that all four colleges design courses and curricula closely linked to business needs through their non-credit and continuing education programs. Two of the four schools visited offer on-site training for large local employers, and all four offer courses customized to employer needs on campus. Relatively few full-time faculty, however, teach in these programs. As a result, this form of college-community link has little impact on most faculty even as it becomes an increasingly important component of institutional activities and goals.

Career Assistance

Extent of Linkages

Career assistance can take a variety of forms, ranging from simply talking with students about their career concerns, to finding out what skills employers are looking for in new hires, to directly placing students into jobs. Our survey and case study evidence suggests a high degree of connectivity among vocational faculty on these dimensions. For example, faculty talk with students regularly about their work and career options (Table 6, items a and b).[14] In terms of acquiring labor market information from

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[14]Interestingly, there appears to be relatively little information sharing about job opportunities among faculty members themselves (Table 7, items b and c). The mean response to this item suggests that during the course of an academic year, vocational faculty shared or received such information about six to ten times, while academic faculty did so less than five times. This is likely related to the departmentalization of community colleges and consequent separation of staff, consistent with Grubb and Kraskouskas (1992).

employers (Table 5, items a, b and c), vocational faculty appear to be very active. More than three-quarters of full-time vocational faculty had sought such information. Most encouraging in the context of rapidly changing labor market skills is that eighty-seven percent of instructors had asked an employer about the kinds of skills they needed in new hires. In sharp contrast, fewer than one-third of academic faculty had undertaken such steps, a surprising result perhaps in light of the widespread attention given to the low academic standards of new high school students, and the emphasis over the past few years on the integration of academic and vocational curricula.

Types of Linkages

Faculty's labor market linkages play a vital role in helping students find jobs in their chosen fields, but our site visits revealed that this assistance is typically informal and ad hoc. Almost all the vocational faculty with whom we spoke at our four institutions periodically receive calls from employers about job openings, which they pass on to students as well as providing informal career counseling to them. Many call employers to recommend their top students. Finally, faculty in programs that include internships, clinical practica, or apprenticeships noted that these training placements lead to job offers for many students.

On each campus we visited, job placement is a major criterion for evaluating program and institutional success. Thus, faculty in vocational areas have strong motivation to obtain complete information about students' employment outcomes.[15] All four institutions visited report high placement rates (seventy-five percent or more of graduates employed in their field of study within one year). Such statistics can be misleading, however, because they typically do not include students who drop out prior to completing their program. They also may not indicate the level at which students are employed. Also, some students are seeking to advance with a current employer rather than seek new employment, and the manner in which schools track these students' career outcomes vary.

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[15]To achieve this, in some cases the responsibility for job placement is centralized in institutional career centers. Thus, when employers inform faculty of job opportunities or when faculty help students find jobs, they are expected to convey this information to the career center. In this way, individual faculty members' connections to employers may become institutionalized.

The degree to which faculty are involved in career counseling and placement is related to the characteristics of local labor markets. One of the institutions we visited is located in a fairly depressed economy; another in a rural area with limited employment options; and a third in a region with many employers and a rapidly changing labor market. Faculty in each of these face difficulties providing career assistance to students, although their motivation to do so is high. In the fourth institution, located in a region with a relatively strong and stable economy, faculty are better able to develop enduring ties to local employers, and faculty are more involved in referring students to employers and vice versa.

Institutional Service

Extent of Linkages

Another way in which community college faculty—especially vocational faculty—build community connections is through administrative activities. Of these, the most important and widespread is advisory committees for vocational programs. In our survey we asked whether a faculty member's institution or department had a "curriculum development" and "program advisory" committee, whether they served on the committees and whether it included business or community representatives. Almost ninety percent (eighty-eight percent) of full-time vocational (academic) faculty indicated that such a curriculum committee was convened in 1994-95; the figures for a program advisory committee were eighty-six percent for vocational full-time instructors and sixty-eight percent for full-time academic faculty. In both cases, vocational faculty were more likely to serve on such a committee, which was far more likely to have business or community representatives. For example, thirty-three percent of full-time vocational faculty report that the curriculum development committee at their school had such representation, and ninety percent said that the program advisory committee did. This contrasts to eighteen percent and sixty-four percent of full-time academic instructors.

Types of Linkages

Our case studies confirm the pervasive nature of advisory committees. All four schools visited expect each vocational degree or certificate program to convene an advisory committee. In three of the four schools, annual or bi-annual committee meetings are required by the state as a condition of funding for vocational programs.

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Additionally, in these same three schools, committee approval is required before the state will approve curricular changes to vocational programs. The voting members of the advisory committees include practitioners from community workplaces; ex officio members include deans, program coordinators or department chairs, and other faculty.

Across all four sites, advisory committees were the most frequent "top of mind" response to questions concerning how faculty built and maintained connections with local labor markets. These committees are the best evidence of policy makers' and institutions' intentions to foster community-college linkages. They are also one of the few institutionalized and required—as opposed to ad hoc and voluntary—mechanisms for linking at the faculty level. Although institutions rely upon advisory committees as the cornerstone of their efforts to maintain responsiveness to local labor markets, respondents at all four sites acknowledged that the quality of the committees varies widely. At best, these advisory committees allow for true college-community engagement and provide opportunities for practitioners to serve as "critical friends" to the college and stimulate program improvements. At worst, they are devoid of true content and serve as window dressing to satisfy state policy makers or institutional leaders.

An advisory committee meeting we observed at one college points to some of the problems advisory committees may encounter. The meeting, held on behalf of the Medical Laboratory Technology program, was scheduled for 1.75 hours. Attending were about six institutional administrators and faculty and six community members, representing five different health care organizations. Two of the community members were college alumni. The agenda covered such items as the program budget, admissions and enrollment data, a report on clinical affiliations and placements, development of a new phlebotomy diploma program, a job market needs analysis, curriculum review and approval, and requests for input on continuing education offerings that the college could provide. That the group was able to complete this ambitious agenda within approximately one hour says something about the level of discussion. Virtually every recommendation or goal mentioned by college administrators went unchallenged, despite the best effort of these administrators to generate discussion. Even allowing for the

possible inhibiting effect of the observers, this advisory committee meeting provided little feedback, strategic direction, or information to the college.[16]

In addition to the direct effect of the advisory committees on curricula, the committees are also viewed as a place to recruit part-time faculty since membership is comprised of practitioners who care about educational issues. Often, members who become part-time faculty maintain their seat on the committee as community representatives. While these members may be in a strong position to connect the concerns and needs of college and community, their independence and objectivity is somewhat threatened by their role as employees of the college.

Although advisory committees are by far the most important administrative means of promoting faculty-community linkages, other governance activities also contribute to linking. All four colleges, for example, are involved in private fund-raising, which provides occasional opportunities for some faculty to directly interact with business leaders in their field. A midwestern college, for example, was opening a new health sciences building that had received support from local businesses. One west coast college had received private funds for an auto body shop, and the other west coast college we visited was building a new theater for its fine arts division and a computer simulation laboratory for its business division with private funds. The southern campus received extensive private support for campus gardens integral to its horticulture program.

Participation in governance also provides faculty with exposure to information and data about local labor markets. For example, two of the four schools visited had commissioned extensive demographic and economic studies of their service region within the past three years; one-third had conducted a less extensive study; and all four use Bureau of Labor Statistics and other public data to better understand the local economy. Although these reports are widely available, those faculty who participate in campus governance are most likely to be aware that the information exist and know how to access it.

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[16]Clearly, this is but one example and may not be representative. An interesting future study would focus on these program advisory committees and explore their operation in different settings.

Professional/Community Activities

Extent of Linkages

Professional and community linkages encompass a wide range of behaviors such as consulting and professional activities and membership and involvement in local community groups. Our survey generally confirmed differences between vocational and academic faculty in the extent of connectivity on professional activities, with few differences in community activities. According to our survey, more than half of full-time vocational faculty had provided consulting services to local employers (Table 7, item k), about thirty percent of all faculty. However, faculty rarely gave presentations or training workshops to local business, government or community organizations (Table 5, item d). The mean response for the latter was 1.5 (where 1= 0 times during the academic year 1994-95 and 2 = 1-5 times), with only small differences among types of faculty.

Our survey also asked faculty whether they were a member of various groups and, if they were, the extent to which they were "personally involved" in them. Table 8 reports the mean responses for all faculty and by faculty type. The first column for each group indicates the proportion who indicated they were members of the group, and the second column shows the overall proportion reporting they were actively involved. Personal involvement was rated on a five-point scale from "none" (= 1) to "a lot" (= 5). All those who answered 4 or 5 are said to have been actively involved.

Although around three-quarters of instructors were members of professional associations (including a majority of part-time faculty), only around one-fifth were members of business or civic groups, and fewer than ten percent were actively involved. As one might expect, full-time vocational faculty were significantly more likely to be active in local business/industry groups than were academic full-timers. And there were relatively few differences between types of faculty in activities not inherently linked to disciplines: all were about equally likely to be involved with charitable or civic organizations, for example. Vocational faculty are significantly less likely to be active in politics than academic faculty, but more involved with their local churches and schools.

(INSERT TABLE 8 ABOUT HERE)

Types of Linkages

In our site visits, we discovered many examples of professional and community activities: (1) participation in professional associations; (2) serving as board members for organizations in their fields, such as hospitals, medical laboratories, child care facilities, or public safety consortia; (3) participating in accreditation reviews or other evaluations of such organizations; (4) beta testing software; (5) writing books and manuals, or preparing training video tapes or cassettes; (6) providing consulting services or "moonlighting" for local employers; and (7) maintaining informal networks in one's field. Many faculty with whom we spoke mentioned their involvement in professional activities as a key means of establishing connections with the community.

Summary

Here we simply summarize our most important survey and case study results on the type and extent of linkages to the labor market:

- Vocational community college faculty tend to be more highly connected to the labor market than academic faculty;
- Part-time faculty are generally less connected to the labor market than full-time faculty;
- Low intensity linkages are widespread, while ones requiring significant planning, preparation, or set-up are relatively infrequent;
- Linkages related to career assistance are most prevalent;
- Vocational faculty rely on formal advisory committees and informal links to employers for labor market information tied to job placement and for input into curricula;
- Professional activities were widespread and a key means of establishing connections with the community.

V. EXPLAINING FACULTY LABOR MARKET LINKAGES

Overview of Analysis

How can we explain the types and extent of linkages? Our background analysis (section II) suggested that a simple economic or socio-psychological model of faculty behavior would predict a set of individual and institutional factors which could be expected to influence the behavior of any individual instructor. This discussion highlighted the likely importance of a faculty member's teaching field and part-time/full-time status, as well as institutional features such as location (e.g., proximity to employers), governance (opportunities to participate in college decision making and interactions between faculty), and resources (time, professional development and other incentives) which may facilitate or hinder an individual's willingness or ability to undertake linking activities.

In order to assess what factors were most important in explaining linkages, we analyzed our survey and case study data. In this section we report our results in an integrated fashion by discussing a set of key factors which seem to us to explain linking behavior or the absence of it: teaching field; part-time/full-time status; time, resources, and institutional incentives; institutional governance and program boundaries; and local conditions. We discuss each below. Underlying this discussion is a detailed consideration of our interview and other data gained at our four sites, and a comprehensive set of analyses using survey responses. The latter involves two basic components: a formal investigation, using multivariate regression, of the determinants of responses to the connectivity items reported in the previous section; and examination of faculty survey responses to specific questions about the individual and institutional incentives and disincentives to undertake linking activities.

First, we used multiple regression to determine which individual and institutional characteristics had independent effects on the responses of faculty described in section IV. In other words we treated faculty responses on connections to the labor market on each survey item in Tables 5, 6 and 7 as outcome variables.[17] Our explanatory variables

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[17]Since in most cases the dependent variable is dichotomous (either 0-1, or a scale of 1-5), ordinary least squares (OLS) is strictly inappropriate. We therefore also

included a set of individual characteristics of the faculty member: sex, race/ethnicity, age, years of experience teaching in community colleges and in the current institution, degree level, rank, tenure status, part-time status, primary teaching field. Our explanatory institutional characteristics included region, urbanicity, total enrollment, governance structure (multi-campus district, single college district, university branch), and whether the faculty are unionized. Given the difficulty of interpreting the coefficients and magnitude of the effects of independent variables from these models, we simply discuss the estimated direction of the effects below.[18]

In our survey data analyses, we confined our attention to the set of "objective" individual and institutional variables, although it would be possible in principle to include in such statistical models individual "subjective" predictors such as job satisfaction, or institutional explanatory factors such as campus climate, which could be constructed from other survey items. This approach may lead to statistical problems, however, and in this paper we do not adopt this strategy.[19]

The ability of our set of objective individual and institutional characteristics to explain variation in connectivity ratings varies widely across outcome measure. For example, for all faculty, we can typically explain between ten percent and twenty percent of the variation, with adjusted R-squareds as high as .22 to .23 for some measures (number of times assisted students seeking a job, asking employers about the quality desired in new hires, asking employers about the performance of graduates) and as low as

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estimated ordered logit models (in the case of scaled variables) or binary probit models (in the case of 0-1 variables) to confirm our OLS results.

[18]Given the large number of indicators of connectivity—outcome measures—available to us, and the large number of independent variables used in our models, reproducing complete regression results is impractical. More important, it is not informative since the magnitudes of the estimated coefficients have no meaningful interpretation in this context. (Results may be obtained from the authors on request.)

[19]Since all items were completed at a point in time, it is far from clear if these measures are used whether they can be treated as exogenous in regression models. If they cannot, ordinary least squares regressions will yield biased results, and correcting for possible endogeneity using instrumental variables is problematic given lack of obvious identifying variables.

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.02 to .04 for others (co-teaching a course with a business representative, number of times given a presentation to business). These R-squareds are not atypical for cross-section data. Since our goal is not to *predict* the extent of connectivity but simply to highlight which factors seem to be independently associated with greater or less connectivity, this is not a major problem.

Second, we analyzed the faculty survey responses to two additional sets of variables which provide further clues as to variation in connecting activities: perceptions of barriers to building linkages; and perceptions of the institutional climate and support in providing labor market information and promoting linkages. Table 9 reports faculty perceptions of some of the possible barriers to linkages. Survey participants were asked "To what extent do you agree or disagree with the following statements about links to local business, government, and community organizations?" with the response scale being "strongly agree" = 1 and "strongly disagree" = 5. In addition to using these means, we conducted multivariate analyses of the determinants of respondents' view of these barriers. We regressed our subjective barrier rankings on the same set of individual and institutional characteristics discussed above. These results permit us to determine which factors have statistically independent effects on the ratings.[20] Once again, these results are discussed thematically below, in the context of all our other survey and case study evidence.

(INSERT TABLE 9 ABOUT HERE)

Further clues as to the extent to which opportunities exist for promoting linkages are shown in Table 10. Faculty were asked to what extent various statements described their institution on a five-fold scale: "does not describe my institution " = 1 to "very much describes my institution" = 5. The means by type of faculty are shown in Table 10. (Underlying frequencies are shown in Appendix Table 4.) These items provide some indication of how faculty view their institution and its policies.

(INSERT TABLE 10 ABOUT HERE)

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[20]Once again, we do not show the regression results themselves (available from the authors), but report statistically significant or interesting results in the text.

Teaching Field and Full-time/Part-time Status

Two dominant individual- (faculty-) level factors emerge from the multivariate analyses of faculty survey data as important in explaining the connectivity of two-year college faculty to the labor market. First, vocational faculty are statistically more likely to say they are connected on almost all our linkage measures, other things equal. Second, part-time faculty are far less likely to engage in linking activities, all else constant.[21] These two characteristics stand in marked contrast to other individual factors which appear to have effects that are far less consistent. For example, there is no clear pattern to the effects of a faculty member's race/ethnicity, sex, rank, or seniority, on labor market connectivity, holding other factors constant.

It was clear from our conversations with vocational faculty in our site visits that they have a strong incentive to connect to the labor market—linkages are essential to the very survival of vocational education programs for two reasons. First, linkages bring enrollments. Since many community college students are adults, the workplace is an important setting for recruiting students. Faculty repeatedly pointed out that many of the students in vocational programs are already working and are seeking a certificate or degree as a way to advance their careers. Second, linkages bring job offers for enrolled students. Community college vocational programs are held accountable for placing students in jobs in their fields—failure to achieve target placement rates threatens continued funding and, at minimum, ensures oversight and pressure from administrators. Thus, faculty sought connections to local labor markets to obtain job offers for students.

Faculty in programs with required internships or practica also have a strong motivation to keep work sites satisfied with the students. If the sites pull out of the training program or prefer another school's students, the vocational program's survival is threatened. Thus, when site personnel express dissatisfaction with students, faculty strive to respond through changes to curriculum or pedagogy. There is an inherent incentive to listen to and actively solicit participation from business representatives both through formal departmental/program advisory committees and through informal channels.

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[21]Further separate regressions using just vocational or academic faculty continue to show part-time status as an important independent predictor of connectivity; similarly, separate regressions for full-timers and part-timers continue to illustrate the importance of teaching field.

The position of part-time faculty was also clear. While they may work in the labor market outside of their college teaching assignment, they have only weak connections to the rest of their college colleagues. They spend less hours on campus, are less likely to have an office, a computer linked to other faculty, or participate in decisions about curricula. Survey results clearly suggest that, other things held constant, this leads to less labor market connectivity, at least on the dimensions captured on our instrument. As noted in section IV, though, part-time vocational faculty are still relatively highly connected compared to many (full- and part-time) academic faculty. Our site visit conversations with administrators and particularly vocational faculty suggest that part-timers add to the quality of occupational programs in terms of providing up-to-date skills in the classroom. They do, however, have less time available and less incentive to spend that time helping students with career matters and job placement.

These marked differences between academic and vocational (and to a lesser extent full- and part-time) faculty in connectivity are partly, then, attributable to differences in the nature of the faculty member's status. In other words, by the very nature of their field and program, vocational instructors are inherently more likely to be linked to the labor market. But there are other channels through which differences between the two types of faculty may be important: for example, suppose academic faculty were to work more hours and hence have less time for building linkages, or suppose academic faculty received less support from their institutions to undertake such activities. In this case, teaching field is only part of the answer. Hence, we now go to a discussion of other factors which can help explain the patterns of connectivity observed in our survey data and in our case studies.

Time, Resources and Institutional Incentives and Support

Time

Building and sustaining linkages to local employers is only one in a long list of faculty responsibilities. Our survey suggests that full-time faculty are working a lot of hours—the mean for academic and vocational faculty is about forty-six hours a week (there is no statistical difference between the two); about twenty-one percent of faculty claim they work fifty or more hours per week on average. Most vocational faculty we spoke with at our sites said their workload far exceeded forty hours a week, leaving little time for additional activities. Faculty in vocational departments and divisions repeatedly

pointed out that their teaching loads were much heavier than those of faculty in academic departments. For example, faculty in one California community college did not receive any workload credit for teaching laboratories or practica. In addition, many (arguably most) vocational departments have fewer faculty full-time equivalents on average than academic departments, so that each faculty member must assume a greater share of the work of running a department, including curriculum development, participation in campus initiatives, and routine administration. Beyond the real time limits of vocational faculty experience, the perceived discrepancy between vocational and academic faculty teaching loads leaves at least some vocational instructors disinclined to invest extra time on behalf of their college.

Additionally, the distribution of work responsibilities is also a barrier to connecting with local labor markets. Specifically, many vocational faculty teach in the evening, because their students work during the day. This prevents them from attending professional association meetings and other community events that would provide opportunities for building linkages. Similarly, faculty often are unable to attend conferences or workshops, if such events conflict with their teaching schedules.

Beyond heavy workloads, faculty pointed out that building linkages to the labor market competes with other special initiatives. All four colleges we visited participated in some kind of School-to-Work or Tech-Prep initiative, but these primarily involved building linkages to local high schools (and in one case, a nearby polytechnic university), not the labor market. Other special initiatives, including integrating academic and vocational education, VESL programs, and major strategic planning initiatives also require "extra" time from vocational faculty, time that could, under other circumstances, be spent on building labor market linkages.

When asked on our survey if they thought that a barrier to building linkages was lack of time (Table 9, item a), faculty were fairly neutral, with academic faculty significantly more likely to agree this was a problem. However, when contrasted with the other seven options given as possible barriers, "I have no time to develop links" was the one which faculty were least likely to disagree with. Thirty-eight percent of all faculty strongly agreed or agreed that they had no time; thirty-nine percent disagreed or strongly disagreed (Appendix Table 4, item a). Importantly, lack of interest on the part of employers was not considered a barrier by most instructors, with all types of faculty

disagreeing with this notion (Table 9, item d.). Similarly, faculty themselves disagree with the idea that stronger links are not needed (Table 9, item g.). The case studies underscore the fact that building labor market linkages is just one among many responsibilities facing community college faculty. Although faculty and administrators all spoke of the importance of such linkages, the work of building and sustaining them may be a lower priority than other initiatives and goals. Moreover, the heavy teaching duties vocational faculty face, and the difference between the duties of vocational versus academic faculty, are a disincentive for vocational faculty to spend additional time connecting with local labor markets.

Resources

All the community colleges we visited had highly constrained resources. Insufficient funding deters vocational faculty from connecting with local labor markets in several ways. The lion's share of available institutional resources cover salaries and benefits for faculty and staff. Very little is left over for operations and even less is available for professional development. Of the four schools visited, one had no means of reimbursing faculty for any professional development activities. The available pool of professional development funds in another school averaged sixteen dollars per year per faculty member. Administrators here emphasized that, although the school was unable to reimburse faculty for professional development activities, it would grant release time whenever possible and help faculty find substitute teachers so they could miss classes; the faculty, however, reported that the lack of funding for these activities was a major obstacle to participation. A third school had convened a faculty committee to allocate limited faculty development funds; on average, individual faculty members received well under one hundred dollars per year from this committee. The fourth school provided faculty with six paid "professional development days," by far the largest allocation of resources for this purpose but still quite limited. In sum, across all four institutions, faculty who want to attend a workshop, conference or special event in most cases must use their own funds to do so and cannot expect reimbursement for their time or for their direct costs (e.g., gas, meals, enrollment fees).

All four of our case study schools have programs for faculty to gain workplace experience by spending some time (ranging from two weeks to a semester) working in industry. In all cases, however, funds for such programs are scarce, and only a handful of

faculty could participate each year. The functional value of these programs for building linkages is therefore very limited.

One of the colleges also offered students a workplace experience program. Through this program, students could gain course credit for workplace experience, provided they were supervised by faculty, who would (among other responsibilities) visit the students at the worksite at least twice during the semester. Faculty pointed out, however, that the payment they received for providing this supervision had not changed since the 1960s and did not even begin to compensate them for their time. Thus, few faculty were willing to serve as supervisors in this program and those that did often failed to make the required site visits, thereby losing an opportunity to link with a local employer. Moreover, the paltry payment offered symbolized to some the low value placed on such activities by the administration.

Resources also hinder institutions' abilities to respond to the needs of the workplace, especially in technology-intensive fields. Faculty in programs ranging from computing to fire fighting reported that they were largely unable to keep up with the rapid progress of technology. Moreover, colleges would ask local employers for input on program design (e.g., through advisory committees), but would then be unable to respond because they could not afford the needed equipment, leading to disappointment and frustration for both educators and employers.

Institutional Incentives and Support

Despite widespread acknowledgment that labor market and community linkages are vital to the success and well-being of colleges in general, and vocational programs in particular, our survey and site visits reveal that there are remarkably few formal incentives used by institutions to encourage faculty to develop or nurture linkages. This is likely in part due to lack of available resources; it may also be related to college governance (discussed below). Asked if building linkages was rewarded in tenure and promotion decisions (Table 10, item g), the mean response was under 2 (1 = "does not describe my institution," 5 = "very much describes my institution"), regardless of type of faculty. None of the four schools we studied appeared to consider faculty connectivity in promotion and tenure decisions, although at least some respondents in two schools stated that community linkages were considered in initial hiring decisions. Similarly, none of these sites offered rewards or other forms of recognition for faculty that invested special

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effort in connecting with local employers or other community organizations. Thus, faculty are not directly rewarded for building linkages to the labor market. The survey also suggests that most faculty do not believe their institutions reward innovative activity (Table 10, item i). Community colleges are marked by formalism (fifty-four percent of faculty agree or strongly agree with Table 10, item h—"formal policies and rules govern most activities"), although faculty are very divided as to whether there is "a lot of resistance to change," Table 10, item j (about one-third disagree, one-third agree, and one-third think neither).

In Table 7 we reported faculty responses to whether they had undertaken a range of linking activities across the four dimensions we previously identified—for example, if they had "asked an employer about the skills desired in new hires" (career assistance), "asked an employer to review and comment on a course syllabus" (curriculum and pedagogy) or "asked an employer to donate funds or equipment to your college" (institutional activity). We also asked faculty if they "had received college support" for these activities. We did not specify the type of support in the survey instrument, so that respondents' interpretations of this item could range from tacit approval to something more tangible. However, the results are relatively clear: in general, few faculty received any institutional support for connecting activities. (The second column for each type of faculty shows the proportion of all of that group answering positively). For example, only around seven percent of all faculty (ten percent of full-time vocational faculty) report receiving college support in efforts to co-teach a course with business or community representatives (item i) or in attempting to convince an employer to offer a training workshop or seminar for faculty. College support was reported strongest for career assistance type measures (items a, b and c) where more than half of all full-time vocational faculty said they received institution support. For example, almost fifty-five percent of full-time vocational faculty received support for asking employers about new skills (item a), and fifty-three percent for asking an employer about the performance of their graduates (item c).

In considering the barriers to building links, Table 9 indicates that departments and colleges do not *discourage* linkages: asked if they agreed or disagreed with statements that this was the case, the model response of all faculty was to disagree, the means being around 4 on the 1 = strongly agree, 5 = strongly disagree scale. Interestingly, there is no statistical difference between academic and vocational faculty on

these items, although item h suggests some tension C academic faculty tend to agree that vocational faculty receive more support than they do, while vocational instructors disagree that this is the case.

Institutional Governance and Program Boundaries

Institutional Governance

Both survey and case study results suggest that institutional governance structures may inadvertently hinder faculty from building strong connections with local labor markets. Multivariate analyses of our connectivity measures suggests that faculty in multi-campus districts are less likely to be connected, holding other things constant. Further, investigation of the determinants of responses to questions about barriers (Table 9) suggests that faculty in colleges in multi-campus districts are more likely to agree that they have no time to develop links (item a) or do not know how to develop links (item b), ceteris paribus. In contrast, faculty in single-campus districts are far more likely to disagree (relative to faculty in other governance settings) with the statements that their department or their college discourages them from building links (items e and f). They also tend to disagree more that there is no need for links. Some clues as to why these differences exist were found in our case study institutions.

One institution we visited was part of a multi-campus community college district spanning a broad metropolitan area. Not only did the need to gain district approval for program changes and resource reallocations add another layer of bureaucracy to the decision-making apparatus, but the central district was not always responsive or supportive of the goals, needs, and concerns of this college. The highly politicized nature of governance in this district, and the historically confrontational nature of employee/faculty union—administration relations, as well as competition among the district's colleges for scarce resources, contributed to a generally adverse atmosphere. This was compounded by recent funding cutbacks.

Even those schools that did not have to contend with a district office were sometimes blocked from responding to community needs, however. In particular, all the community colleges we visited noted that considerable time was needed to start up new certificate or degree programs, generally involving justifications to the state and applications for supplemental funding. (Although state approval is not needed for non-

credit programs, such programs generally offer shorter and less comprehensive training.) The approval process, while obviously important for accountability and quality control purposes, nonetheless hinders colleges from providing rapid responses to workplace needs. Similarly, colleges experience considerable difficulty in shutting down programs that are no longer needed or are not performing well, often due to strong political pressures to maintain such programs. As a result, the institutions are unable to reallocate funds to programs that might be more responsive to the needs of the local labor market.

Respondents in all four schools noted the difficulty of offering degree or certificate programs that did not conform to the academic calendar. Rather than develop short training modules that would enable working people to enter the program at multiple times during the year, most programs offer only one to three "start dates" per year, conforming to the structure of the academic calendar. Similarly, some respondents suggested that training in twelve- to fifteen-week blocks (the length of an average quarter and semester, respectively) does not offer sufficient flexibility. Although two schools we visited were experimenting on a small scale with certificate programs that did not conform to the traditional academic calendar, such changes pose numerous challenges since planning and decisions regarding faculty workload, staffing, funding, assignment of credit, and so forth are all based on the academic calendar.

The advisory committees, described elsewhere in this report, are the primary source of linkages between vocational programs and employers. However, the quality of these committees varies widely. At best, they are a valuable sources of input and commentary on program quality. At worst, they meet infrequently, have weak community representation, are inadequately informed about the program, and/or rubber stamp department decisions. Unfortunately, institutional administrators may not know whether an advisory committee is functioning as intended. In short, departments can conform to the letter of the law by holding committee meetings as required but may not conform to the spirit of the law by engaging committee members in a critical review of departmental programs and quality.

Finally, vocational faculty in two of the four schools visited felt that they did not fare well under their institution's shared governance structure. In both cases, academic departments, which had more full-time equivalents (FTE) and whose faculty had lighter workloads, dominated the academic senate. In one school where the senate had the

responsibility to allocate new faculty FTE to departments, the vocational faculty complained that the senate routinely allocated more FTE to the academic rather than vocational departments, thereby perpetuating the inequities between them. This in turn ensured that vocational faculty would continue to face heavy workloads with little time for other activities, including participation in shared governance and connecting with the community.

Program and Other Boundaries

Our survey and site visits suggest that within colleges, boundaries among programs and teaching fields limit the extent to which faculty collaborate. Differences between academic and vocational faculty have already been highlighted. Our mean survey responses to items on institutional climate and policies, shown in Table 10, reveal that there is departmentalization of faculty, and little collaboration between faculty or in shared teaching (items a, b and c), with only slight differences among types of faculty. (The underlying frequencies show that sixty percent of all faculty said that the statement "academic and vocational faculty are housed in separate departments" describes, or very much describes, their institution; fewer than half faculty believe there is collaboration between academic and vocational staff in curriculum development.) These results corroborate the findings of other researchers, noted in section II, which describe the separation of programs and departments (Grubb and Kraskouskas, 1992).

Further, governance structures and departmentalization likely contribute to the fact that many faculty view building links as the responsibility of other people in the college (Table 9, item c). The mean of 2.3 (1= strongly agree, 5 = strongly disagree) for academic faculty indicates perhaps that they see linking as the responsibility of vocational faculty; the low mean for both vocational and academic staff suggests faculty think administrators have an important role to play at the college level in building connections to the labor market.

Yet information about the labor market does not appear to come from college administrators or colleagues (be they within or outside the respondent's department). Table 10 (items d, e and f) implies that building connections to labor markets and communities is primarily an individual responsibility. Our case studies also revealed that faculty had difficulty obtaining information that could help them build linkages. In addition to descriptive information about local employers, some faculty wanted details

that were not easily available. For example, a business computing instructor lamented that she did not know which local employers used the computers on which her students were trained. If she could obtain that information, she could increase the efficiency of her students' job-seeking efforts while also obtaining valuable feedback from the employers about how to best train the students. Similarly, a faculty member in an environmental safety program said that he had little information about the kinds of toxic substances local employers used; if available such information would enable him to customize training to the local environment.

In addition to differences between departments, our case studies revealed a sharp boundary between for-credit vocational programs that grant certificates and degrees and non-credit programs. Because the latter are often delivered under contracts with local firms, the non-credit organizations within all four community colleges visited had strong linkages to local employers. These divisions are better able to build linkages to local labor markets because they are relatively unencumbered by bureaucracy, can respond very quickly to emerging labor market needs, and develop programs customized to the needs of particular employers. However, all four schools we visited reported that the state provided less reimbursement for non-credit than for-credit courses and course enrollments. Thus, unless demand for non-credit courses is so strong that such courses can be self-supporting, the colleges prefer to offer for-credit rather than non-credit courses. This places limits on the degree to which colleges can take advantage of the rapid response time and flexibility that non-credit courses provide.

Unfortunately, the linkages reflected in the non-credit divisions of community colleges have little to no spillover to the for-credit divisions. The divisions typically have very different reporting lines, so there is little opportunity for information exchange. In addition, faculty rarely teach in the non-credit programs because they have full-time teaching loads in their departments. (Some moonlight in the non-credit area, but this was unusual in the schools we visited.) Moreover, although in theory the non-credit courses can serve as gatekeepers to for-credit programs, there is little concerted effort to market for-credit programs in this way, and the impression of most vocational faculty is that they do not attract students from non-credit programs.

Organizational boundaries also hinder faculty from seeking support from local employers. Three of the four schools visited had development offices, which are

responsible for fund raising. Faculty are discouraged from independent initiatives in this area, since such efforts might conflict with those of the larger institution. As a result, faculty did not feel empowered to ask their community contacts to help them meet their needs for equipment or funding.

Local Conditions

Part of the explanation for the extent of faculty-labor market connectivity is due to college location and characteristics of the local labor market. In our survey analyses we were only able to capture such conditions very crudely—for example, by urbanicity and region—so the importance of location is subsumed into other factors. Further, the survey instrument asked only about one school year, not about changes over time in the college or its environment. However, our case studies suggested the importance of a number of different aspects of locale.

First, respondents pointed out that when the local economy is weak, the colleges have a difficult time building connections with the labor market because employers are not doing much recruiting and therefore have little motivation to interact with the college. In addition, the employers have less money to contract with the college for training programs and courses; they have less time to spare for activities such as advisory committee meetings; and they turn over equipment less often, leaving the college with less opportunity to obtain "hand-me-down" equipment for instructional purposes. Also, there are fewer employers within the college's service area, which de facto limits opportunities to build linkages and also increases competition among educators (e.g., private proprietary schools and community colleges) to serve as the "pipeline" to those employers that remain.

Second, community colleges in rural areas or areas dominated by a single industry or employer have fewer opportunities to build linkages. Although in most cases faculty focus their efforts to connect with community on the local service area, in some locations students may need to search for work well beyond the service area.

Third, linkages are difficult to forge and sustain in regions with a rapidly shifting, unstable, or highly diversified labor market. For example, one of the four colleges we visited is located in an area dominated by small businesses, many of which have short life spans. Faculty here stated that they were unable to keep up to date on local employers in

their fields of specialization without investing considerable time and resources. Even in schools that are located in more stable regions, certain fields such as photography, child care, or tool and die tend to be dominated by small employers that may come in and out of business in relatively brief periods of time. Although collectively, such employers may represent a substantial job market, the task of building lasting and useful linkages is daunting, since any single business may not hire often and may fold, merge, change locations, and so forth within the space of a few years.

Fourth, linkages between vocational faculty and local labor markets are affected by the community image of the college. One of the colleges we visited was perceived (erroneously) as largely a transfer-oriented institution; another was described as "the best kept secret" in its community. Lack of community awareness or distortions in the image of the institution posed obstacles to faculty efforts to build connections.

Summary

Our examination of survey and case study evidence suggests the following are important factors in explaining faculty-labor market linkages:

- Vocational faculty are more connected to the labor market, other things equal, largely because their programs depend on enrollments and placements for survival;
- Part-time faculty have weak connections to their institutions and, other things equal, lower levels of connectivity to the labor market;
- Faculty have very little time available for undertaking intensive linking activities;
- Limited institutional resources limit professional development and workplace placement opportunities for faculty;
- Institutions do not formally reward linking behaviors and faculty receive little support form their colleges, with the exception of vocational faculty in career assistance activities;

- Faculty in multi-campus districts have lower levels of connectivity, other things equal;
- Strong boundaries exist between academic and vocational departments, and between credit and non-credit programs, in most colleges, limiting collaboration and information sharing;
- Local conditions affect the opportunities for faculty to build linkages.

VI. CONCLUSIONS

We have argued in this paper that strengthening the linkages between educational institutions and the labor market is an important component of improving the nation's education and training system. It has been, and continues to be, a key ingredient in federal and state efforts to reform vocational education. Focusing on the role of instructors at public two-year colleges, our study sought to determine the nature and extent of the different connections that exist between faculty and local business, government and community organizations. We found that while there are many examples of linking activities, particularly among vocational faculty in community colleges, these are often ad hoc and informal in nature, and that institutions do relatively little to encourage or reward the building of connections through incentives.

Using a national survey of 1,725 community college faculty, we find that "low-intensity" linkages (such as using business examples in the classroom) which require relatively little effort, are widespread among all types of faculty. More pro-active measures (such as taking students to visit local business, government or community organizations or developing new programs with work components), which are time-consuming and labor-intensive, are far less likely to be initiated. Full-time, vocational faculty undertake most of the connecting activity, in particular in career assistance matters, for their students. In large part this appears to be due to the importance of successful job placement for the survival of occupational programs. The relatively low levels of connections among academic faculty and the minimal collaboration between academic and vocational faculty suggest that efforts to make these subjects more applied is a slow process.

The survey suggests that there is little institutional support for building linkages, particularly in the realm of formal incentives: institutions do little to reward connecting behavior in promotion or tenure decisions; they have very limited resources to encourage faculty to build linkages to the labor market through professional development funds or workplace placement/exchange programs; and the funds they do have do not appear to be used very innovatively. Further, faculty have high workloads and building connections is simply one of many responsibilities.

Our case studies confirm these conclusions. Although institutions may have many links to the labor market, this may not affect what happens in the classroom. Academic faculty rarely undertake connecting activities, and there are few formal incentives for vocational faculty to link. Rather, the latter are motivated by the need for enrollments and successful student placement for their programs. Advisory committees are the major linking vehicle at the vocational program level, providing updates on workplace skills and opportunities, providing feedback on graduates and curricula input. However, in our visits the quality of these committees appeared uneven.

A hopeful finding from survey and case study data, however, from the standpoint of improving connections between employers and colleges, is that most faculty believe such links are important and that employers in their local labor market do too. This suggests that if improving linkages between community colleges and their local labor markets and communities is deemed important by policy makers, as it appears to have been of late, changes are needed in institutional incentives that might promote such activities. Formally rewarding faculty who develop strong employer links, and greatly expanding the number and range of opportunities for faculty to utilize professional development for linking purposes, would likely have an impact. These changes, if accompanied by efforts to free up faculty time (e.g., through release time or reduced teaching loads), may boost faculty-labor market links. In the absence of new funds, these changes in resource allocation can only occur by reducing funds expended in other areas. For this to happen, administrators and faculty must be convinced of the centrality of such links in providing courses with high-level and relevant skills training for students, and of their importance for institutional mission in the new economy.

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TABLE 1

Means (standard deviations) for Selected Variables, by Faculty Type, Community College Faculty Survey

	All Faculty	Vocational	Academic
Age	47.5 (9.5)	47.3 (9.0)	47.6 (9.8)
Female	.472	.484	.434
Years teaching in community colleges	11.9 (8.9)	12.1 (8.5)	12.1 (9.4)
Years teaching in current institution	10.7 (8.6)	11.1 (8.3)	10.7 (9.0)
Hispanic	.026	.020	.032
Black	.036	.033	.029
B.A.	.180	.284	.086
M.A.	.624	.565	.688
Ph.D.	.158	.070	.232
Full professor	.149	.150	.156
Associate professor	.094	.095	.089
Assistant professor	.072	.063	.079
Instructor	.307	.337	.277
Adjunct professor	.157	.120	.193
No rank	.141	.156	.136
Urban	.574	.593	.563
Rural	.133	.154	.109
Northeast	.160	.164	.167
North central	.189	.245	.152
West	.304	.253	.319
Single-campus college	.574	.590	.561
Multi-campus district	.201	.176	.233
Total enrollment	10275 (9380)	9408 (8557)	10501 (9563)
Tenured	.335	.346	.338
Faculty represented by union	.574	.569	.567
Part-time	.509	.439	.527
Vocational	.408	---	---
Number of observations	1725	703	725

NOTE: "Number of observations" refers to maximum number available; means may be based on a smaller sample due to missing observations.

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TABLE 2

Means of Selected Variables, Community College Faculty: Comparison of Surveys

	Our sample	*NSOPF-'93*
Percent male	52.9	54.1
Percent white	88.1	86.8
Percent undergraduates	23.4	27.9
Percent with M.A./professional degree	61.2	61.8
Percent with full professor	14.7	10.4
Percent tenured	33.4	24.3
Percent union members	56.0	57.7
Number of observations	1725	8646

NOTE: *NSOPF-'93* is the National Survey of Postsecondary Faculty, 1993. Figures for *NSOPF-'93* refer to public two-year college faculty only and are weighted (using NCES weights) to be nationally representative.

TABLE 3

Overview of Case Study Site Characteristics

	Site 1	Site 2	Site 3	Site 4
Location	S. California	S. California	Midwest	South
Urbanicity	Suburban	Urban	Urban	Rural
Economy	Service; small business; healthy economy	Mixed; depressed economy	Industrial; healthy economy	Tourism; some industry; depressed economy
For credit college enrollment	21,200	7,500	Over 50,000	2,400
Type of college	Comprehensive	Comprehensive	Technical	Comprehensive

TABLE 4

Site Visit Respondents

	Site 1	Site 2	Site 3	Site 4
President		1	1	1
Vice President	1	1	1	1
Department Heads	4	7**	8*	7*
Faculty	4	1	10**	1
Student Services	1	2	1	1
Community Relations, Community Services	1 (community education and development)	0	2 (community relatioins; economic development)	3 (continuing education, business-industry services, community services)
Institutional Research	1	1	1	1
Other	1 (dean, instructional services)	3 (special programs; special assistant dean, academy affairs)	2 (union)	2 (dean and assistant dean, instruction)
Total	13	16	26	17

*Focus group.
**Some in focus group, some individually.

TABLE 5

Ratings of Connectivity Measures
(1 = 0 times, 2 = 1-5 times, 3 = 6-10 times, 4 = 11-20 times, 5 = more than 20 times),
by Faculty Type, Community College Faculty Survey,
Means (standard deviations)

	All Faculty	Full-time/ Vocational	Full-time/ Academic	Part-time/ Vocational	Part-time/ Academic
a. Provided assistance to students seeking employ-ment (CA)	2.51 (1.30)	3.47 (1.24)	2.33 (1.07)	2.44 (1.17)	1.79 (1.03)
b. Shared information with a colleague on campus about job opportunities for students (CA)	2.14 (1.16)	2.92 (1.20)	1.94 (0.92)	2.07 (1.07)	1.49 (0.81)
c. Received information from a colleague on campus about job opportunities for students (CA)	2.04 (1.11)	2.70 (1.18)	1.98 (0.97)	1.91 (1.03)	1.49 (0.80)
d. Gave a presentation or training workshop to a local business, government, or community organization (PR)	1.51 (0.77)	1.72 (0.83)	1.35 (0.55)	1.56 (0.80)	1.30 (0.60)
e. Provided your class with guest speakers from local business, government, or community organizations (CP)	1.58 (0.76)	1.94 (0.83)	1.44 (0.73)	1.59 (0.74)	1.26 (0.50)
f. Took a group of students to visit local business, govern-ment, or community organization work location (CP)	1.40 (0.72)	1.75 (0.90)	1.26 (0.56)	1.42 (0.76)	1.15 (0.44)
g. Personally developed new internship, apprentice, or cooperative education programs (IN)	1.28 (0.64)	1.49 (0.77)	1.20 (0.51)	1.22 (0.50)	1.13 (0.40)

NOTE: The table shows mean responses to the question, "Approximately how many times did you engage in each of the following activities during the 1994-95 academic year?"

CA = Career Assistance; CP = Curriculum and Pedagogy; PR = Professional and Community Activities; IN = Institutional Activities.

TABLE 6

Ratings of Connectivity Measures (1 = never, 3 = sometimes, 5 = often), by Faculty Type, Community College Faculty Survey, Means (standard deviations)

	All Faculty	Full-time/ Vocational	Full-time/ Academic	Part-time/ Vocational	Part-time/ Academic
a. Talked with students about their work experiences (CA)	3.65 (1.21)	4.24 (0.99)	3.19 (1.20)	3.86 (1.09)	3.32 (1.22)
b. Talked with students about their career concerns (CA)	3.86 (1.16)	4.34 (0.92)	3.64 (1.14)	3.93 (1.09)	3.45 (1.22)
c. Used business/industry examples to illustrate concepts in class (CP)	3.76 (1.35)	4.39 (0.98)	3.26 (1.35)	4.26 (1.08)	3.29 (1.45)
d. Used business/industry case studies for student assignments (CP)	2.59 (1.51)	3.30 (1.46)	1.98 (1.27)	3.00 (1.46)	2.09 (1.36)
e. Developed assignments requiring students to interact with local business, government, or community organizations (CP)	2.25 (1.41)	2.83 (1.42)	1.95 (1.34)	2.22 (1.37)	1.86 (1.24)

NOTE: The table shows mean responses to the question, "How often did you engage in each of the following activities during the 1994-95 academic year?"

CA = Career Assistance; CP = Curriculum and Pedagogy; PR = Professional and Community Activities; IN = Institutional Activities.

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TABLE 7

Ratings of Connectivity Measures, by Faculty Type, Community College Faculty Survey, Means

	All Faculty		Full-time/ Vocational		Full-time/ Academic		Part-time/ Vocational		Part-time/ Academic	
	Activity	College Support	Activity	College Support	Activity	College Support	Activity	College Support	Activity	College Support
a. Asked an employer about the skills desired in new hires (CA)	0.49	0.25	0.87	0.55	0.33	0.16	0.56	0.27	0.22	0.05
b. Asked an employer about the quality of your department or college (CA)	0.40	0.23	0.75	0.51	0.29	0.14	0.42	0.24	0.19	0.06
c. Asked an employer about the performance of your department's graduates (CA)	0.42	0.24	0.79	0.53	0.27	0.12	0.46	0.25	0.17	0.08
d. Asked an employer to review and comment on a course syllabus (CP)	0.28	0.19	0.53	0.38	0.13	0.10	0.29	0.20	0.16	0.11
e. Asked an employer to review and comment on departmental curriculum (CP)	0.33	0.24	0.66	0.49	0.17	0.13	0.35	0.26	0.13	0.09
f. Asked an employer to donate funds or equipment to your college (IN)	0.22	0.13	0.41	0.26	0.17	0.11	0.19	0.09	0.09	0.05
g. Convinced an employer to donate funds or equipment to your college (IN)	0.16	0.01	0.29	0.18	0.13	0.09	0.16	0.09	0.04	0.02
h. Convinced an employer to provide a training workshop or seminar for faculty (IN)	0.10	0.07	0.15	0.11	0.06	0.04	0.12	0.09	0.04	0.03
i. Co-taught a course with representatives of business, government, or community organizations (CP)	0.12	0.07	0.16	0.10	0.06	0.05	0.18	0.10	0.05	0.04
j. Co-taught a course with a faculty member in another department (CP)	0.14	0.11	0.18	0.15	0.17	0.13	0.12	0.09	0.07	0.06
k. Provided consultation or technical assistance to local employers (PR)	0.31	0.15	0.54	0.28	0.17	0.09	0.39	0.20	0.16	0.05

NOTE: The table shows the proportion of faculty responding affirmatively to the question, "Did you ever engage in the following activities during the 1994-95 academic year? If yes, did your institution provide any resources to support you in these activities?" The column labeled "Activity?" indicates the proportion of the relevant group responding yes. The column labeled "College Support?" shows the proportion of the relevant group (not just those saying "yes" to "Activity?") responding that they received institution support.

CA = Career Assistance; CP = Curriculum and Pedagogy; PR = Professional and Community Activities; IN = Institutional Activities.

TABLE 8

Membership in Community Groups, by Faculty Type, Community College Faculty Survey, Means

	All Faculty		Full-time/ Vocational		Full-time/ Academic		Part-time/ Vocational		Part-time/ Academic	
	Mem-bership	Actively involved	Mem-bership	Actively involved	Mem-bership	Actively involved	Mem-bership	Actively involved	Mem-bership	Actively involved
a. Local business or industry group (e.g., Chamber of Commerce, Business Roundtable)	0.16	0.07	0.20	0.08	0.08	0.04	0.20	0.10	0.13	0.04
b. Professional association in your teaching field	0.72	0.23	0.78	0.25	0.86	0.21	0.59	0.22	0.63	0.18
c. Civic organization (e.g., Rotary Club)	0.20	0.11	0.21	0.12	0.17	0.11	0.21	0.10	0.19	0.10
d. Church or religious organization	0.61	0.33	0.68	0.37	0.54	0.27	0.66	0.35	0.63	0.35
e. Sporting club (e.g., golf club)	0.22	0.13	0.24	0.14	0.22	0.10	0.23	0.14	0.20	0.13
f. Charity organization	0.37	0.13	0.36	0.10	0.37	0.13	0.36	0.14	0.34	0.11
g. Political party or campaign	0.35	0.05	0.27	0.03	0.40	0.08	0.29	0.03	0.41	0.06
h. Environmental group	0.18	0.04	0.12	0.03	0.27	0.05	0.09	0.02	0.22	0.06
i. Human services/welfare agency board or committee	0.13	0.07	0.10	0.04	0.12	0.07	0.13	0.07	0.11	0.08
j. School board/PTA	0.19	0.07	0.21	0.07	0.13	0.03	0.21	0.09	0.22	0.07

NOTE: The table shows the proportion of faculty responding affirmatively to the questions, "Are you currently a member of any of the following groups?" and "What is the extent of your personal involvement?" The column labeled "Membership" indicates the proportion who were members of each group. The column labeled "Actively involved" is the proportion of the relevant group (not just those who were members) who were actively involved (personal involvement = 4 or 5 on a 1-5 scale; 1 = none, 5 = a lot).

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TABLE 9

Ratings of Barriers to Connectivity
(1 = strongly agree, 2 = agree, 3 = neither, 4 = disagree, 5 = strongly disagree),
by Faculty Type, Community College Faculty Survey,
Means (standard deviations)

	All Faculty	Full-Time/ Vocational	Full-Time/ Academic	Part-Time Vocational	Part-Time/ Academic
a. I have no time to develop or maintain links	2.94 (1.25)	3.21 (1.26)	2.73 (1.19)	3.18 (1.18)	2.63 (1.27)
b. I don't know how to go about developing links	3.33 (1.21)	3.74 (1.05)	3.02 (1.19)	3.47 (1.08)	2.91 (1.28)
c. Other people in this college have responsibility for developing links	2.54 (1.19)	2.90 (1.22)	2.34 (1.17)	2.59 (1.13)	2.32 (1.14)
d. Employers in our community are not interested in working with our college	4.09 (0.83)	4.22 (0.78)	4.05 (0.85)	4.16 (0.72)	3.96 (0.85)
e. My department discourages me from building links	4.01 (0.97)	4.24 (0.91)	3.99 (0.94)	4.02 (0.94)	3.84 (1.00)
f. My college discourages me from building links	4.01 (0.96)	4.19 (0.96)	4.05 (0.89)	4.07 (0.87)	3.82 (1.00)
g. I don't see much need for stronger links	4.05 (0.94)	4.29 (0.85)	3.80 (1.05)	4.15 (0.81)	3.83 (0.98)
h. Vocational faculty receive more encouragement from my college than academic faculty in building links	3.04 (1.17)	3.26 (1.24)	2.55 (1.21)	3.33 (0.98)	3.01 (1.07)

NOTE: The table shows mean responses to the question, "To what extent do you agree or disagree with the following statements about links to local business, government, and community organizations?"

TABLE 10

Perceptions of Institutional Climate and Incentives
(1 = does not describe my institution, 5 = very much describes my institution),
by Faculty Type, Community College Faculty Survey,
Means (standard deviations)

	All Faculty	Full-Time/ Vocational	Full-Time/ Academic	Part-Time Vocational	Part-Time/ Academic
a. Academic and vocational faculty are housed in separate departments	3.52 (1.58)	3.57 (1.64)	3.72 (1.53)	3.33 (1.60)	3.46 (1.54)
b. Academic and vocational faculty collaborate in the development of curriculum	2.95 (1.29)	2.92 (1.31)	3.13 (1.28)	2.98 (1.26)	2.80 (1.26)
c. Academic and vocational faculty share teaching responsibility for the same courses	2.12 (1.24)	2.04 (1.25)	2.03 (1.24)	2.32 (1.30)	2.16 (1.24)
d. College/department officials supply me with information about the local labor market	2.19 (1.25)	2.48 (1.29)	2.06 (1.23)	2.36 (1.24)	1.90 (1.15)
e. Colleagues in my department supply me with information about the local labor market	2.41 (1.34)	3.10 (1.27)	1.93 (1.10)	2.80 (1.36)	1.85 (1.10)
f. Colleagues in other departments supply me with information about the local labor market	1.92 (1.08)	2.14 (1.13)	1.93 (1.06)	1.88 (1.02)	1.72 (0.99)
g. Links to local business and community are rewarded in promotion/tenure decisions	1.78 (1.07)	1.65 (1.03)	1.89 (1.16)	1.75 (1.00)	1.76 (1.03)
h. Formal policies and rules govern most activities	3.49 (1.22)	3.49 (1.25)	3.56 (1.19)	3.44 (1.12)	3.47 (1.29)
i. Innovative activities are rewarded	2.87 (1.28)	2.71 (1.32)	3.07 (1.24)	2.77 (1.17)	2.91 (1.33)
j. There is a lot of resistance to change	3.04 (1.23)	3.20 (1.23)	3.07 (1.16)	2.92 (1.20)	2.91 (1.28)
k. This institution is highly responsive and adaptive in meeting the needs of the external constituents	3.16 (1.16)	3.11 (1.20)	3.20 (1.10)	3.25 (1.00)	3.08 (1.27)
l. There is a high emphasis on institution-community activities	3.27 (1.15)	3.35 (1.16)	3.18 (1.10)	3.34 (1.09)	3.11 (1.25)

NOTE: The table shows mean responses to the question, "To what extent do the following statements describe your home institution?"

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APPENDIX TABLE 1

Ratings of Connectivity Measures
(1 = 0 times, 2 = 1-5 times, 3 = 6-10 times, 4 = 11-20 times, 5 = more than 20 times),
All Faculty, Community College Faculty Survey

	Frequencies (percent)					Means (standard deviations)
	0	1-5	6-10	11-20	20+	
a. Provided assistance to students seeking employ-ment (CA)	23.4	37.2	17.2	9.2	13.0	2.509 (1.30)
b. Shared information with a colleague on campus about job opportunities for students (CA)	34.0	39.2	12.9	7.0	7.0	2.137 (1.16)
c. Received information from a colleague on campus about job opportunities for students (CA)	36.5	40.5	11.9	5.1	6.0	2.035 (1.11)
d. Gave a presentation or training workshop to a local business, government, or community organization (PR)	60.6	32.0	4.6	1.5	1.3	1.510 (0.77)
e. Provided your class with guest speakers from local business, government, or community organizations (CP)	54.4	37.0	5.5	2.2	0.8	1.578 (0.76)
f. Took a group of students to visit local business, govern-ment, or community organization work location (CP)	69.2	25.3	3.4	0.8	1.4	1.399 (0.72)
g. Personally developed new internship, apprentice, or cooperative education programs (IN)	78.2	18.1	2.0	0.8	1.0	1.283 (0.64)

NOTE: The table shows mean responses to the question, "Approximately how many times did you engage in each of the following activities during the 1994-95 academic year?"

CA = Career Assistance; CP = Curriculum and Pedagogy; PR = Professional and Community Activities; IN = Institutional Activities.

APPENDIX TABLE 2

Ratings of Connectivity Measures
(1 = never, 3 = sometimes, 5 = often),
All Faculty, Community College Faculty Survey

	Frequencies (percent)					Means (standard deviations)
	Never 1	2	Sometimes 3	4	Often 5	
a. Talked with students about their work experiences (CA)	3.7	14.8	30.6	14.8	36.1	3.649 (1.21)
b. Talked with students about their career concerns (CA)	2.6	11.2	25.6	19.1	41.5	3.856 (1.15)
c. Used business/industry examples to illustrate concepts in class (CP)	8.6	12.0	18.5	17.1	43.8	3.757 (1.35)
d. Used business/industry case studies for student assignments (CP)	36.1	16.5	17.7	11.5	18.2	2.593 (1.51)
e. Developed assignments requiring students to interact with local business, government, or community organizations (CP)	44.6	18.6	16.4	7.8	12.6	2.252 (1.41)

NOTE: The table shows mean responses to the question, "How often did you engage in each of the following activities during the 1994-95 academic year?"

CA = Career Assistance; CP = Curriculum and Pedagogy; PR = Professional and Community Activities; IN = Institutional Activities.

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APPENDIX TABLE 3

Ratings of Barriers to Connectivity
(1 = strongly agree, 2 = agree, 3 = neither, 4 = disagree, 5 = strongly disagree),
All Faculty, Community College Faculty Survey

	Frequencies (percent)					Means (standard deviations)
	Strongly agree	Agree	Neither	Disagree	Strongly disagree	
a. I have no time to develop or maintain links	16.5	21.5	23.1	28.9	10.0	2.943 (1.25)
b. I don't know how to go about developing links	8.9	18.4	20.5	35.3	16.9	3.329 (1.21)
c. Other people in this college have responsibility for developing links	18.5	40.3	18.2	14.6	8.4	2.542 (1.19)
d. Employers in our community are not interested in working with our college	1.0	2.7	15.9	47.2	33.2	4.089 (0.83)
e. My department discourages me from building links	2.1	3.4	23.5	33.4	37.5	4.007 (0.97)
f. My college discourages me from building links	2.1	3.3	22.8	34.9	36.8	4.010 (0.96)
g. I don't see much need for stronger links	1.6	4.7	18.9	37.5	37.4	4.045 (0.94)
h. Vocational faculty receive more encouragement from my college than academic faculty in building links	9.8	23.2	34.6	17.9	14.5	3.041 (1.17)

NOTE: The table shows mean responses to the question, "To what extent do you agree or disagree with the following statements about links to local business, government, and community organizations?"

APPENDIX TABLE 4

Perceptions of Institutional Climate and Incentives
(1 = does not describe my institution, 5 = very much describes my institution),
All Faculty, Community College Faculty Survey

	Frequencies (percent)					Means (standard deviations)
	1	2	3	4	5	
a. Academic and vocational faculty are housed in separate departments	21.8	6.0	12.0	19.1	41.1	3.516 (1.58)
b. Academic and vocational faculty collaborate in the development of curriculum	18.6	15.8	31.3	20.4	13.9	2.951 (1.29)
c. Academic and vocational faculty share teaching responsibility for the same courses	44.1	21.1	20.0	8.4	6.5	2.121 (1.24)
d. College/department officials supply me with information about the local labor market	41.0	21.6	20.4	10.8	6.2	2.194 (1.25)
e. Colleagues in my department supply me with information about the local labor market	36.5	18.4	20.8	15.9	8.5	2.414 (1.34)
f. Colleagues in other departments supply me with information about the local labor market	47.5	25.1	18.2	6.2	3.0	1.920 (1.08)
g. Links to local business and community are rewarded in promotion/tenure decisions	58.2	16.3	17.6	5.5	2.5	1.778 (1.07)
h. Formal policies and rules govern most activities	9.2	9.6	28.2	28.7	24.3	3.494 (1.22)
i. Innovative activities are rewarded	21.2	15.6	28.1	24.7	10.3	2.872 (1.28)
j. There is a lot of resistance to change	13.6	18.3	33.8	19.1	15.1	3.038 (1.23)
k. This institution is highly responsive and adaptive in meeting the needs of the external constituents	11.4	13.4	35.6	26.6	12.9	3.162 (1.16)
l. There is a high emphasis on institution-community activities	8.6	14.7	33.3	27.9	15.5	3.270 (1.15)

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